

# SPECTROMAXx

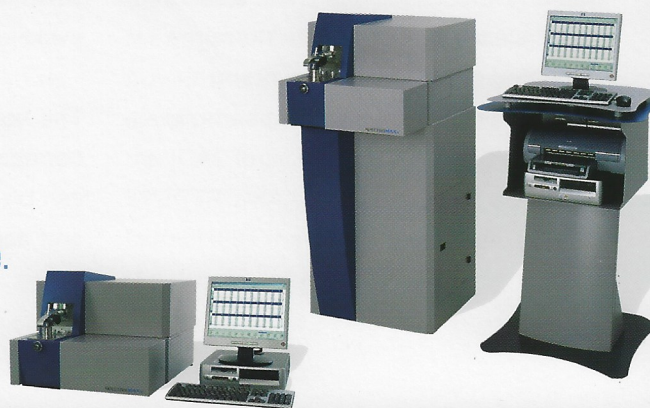
With the fully digitalized plasma generator, specially designed optical

## The New Art of Analyzing Metal

systems, and the unrivaled pioneering ICAL logic system, the high-

performance CCD spectrometer SPECTROMAXx defines the new art of

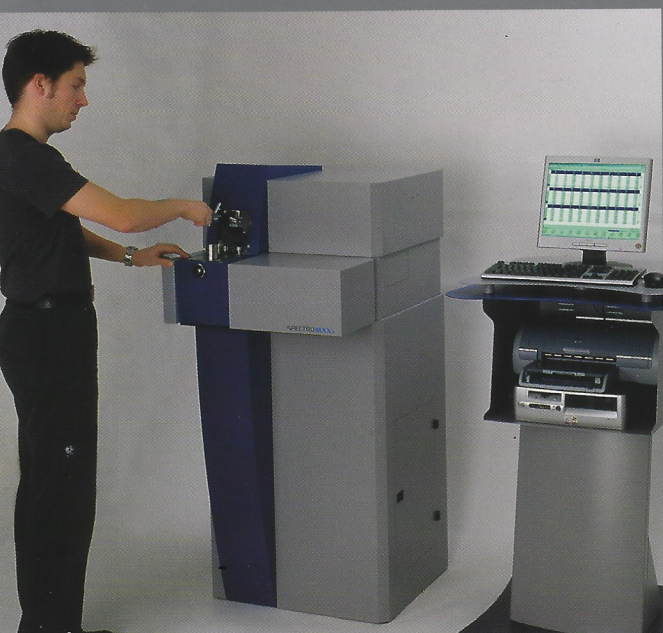
analyzing metal - faster, more exact and more precise than ever before.





# SPECTROMAXx

## The New Art of Analyzing Metal



The new SPECTROMAXx can be configured as a **benchtop or floor model** with storage possibilities for consumables and spares. With **three versions** to choose from, individual requirements are sure to be met. The versions differ in the optical systems and, therefore, the wavelength range used.

The SPECTROMAXx is simple, effective, and efficient to operate. With spark stand cleaning and recalibration relegated to history, the operator spends more time analyzing samples and less time preparing.

The **optimized argon flows** are extremely effective at preventing contamination in the spark stand. The unique **ICAL logic system** eliminates the need for the recalibration process. Instead, all that is required is the **measurement of a single control sample**, which is requested automatically by the instrument and only when necessary. This results in savings of up to 30 minutes or more every day for a multi-base instrument.

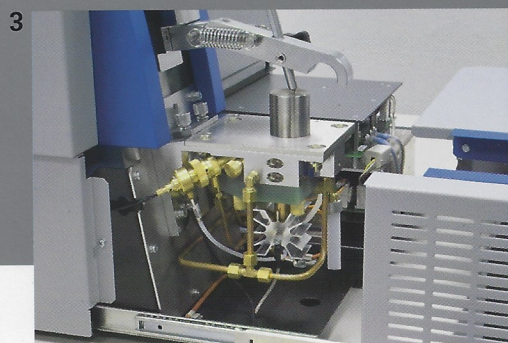
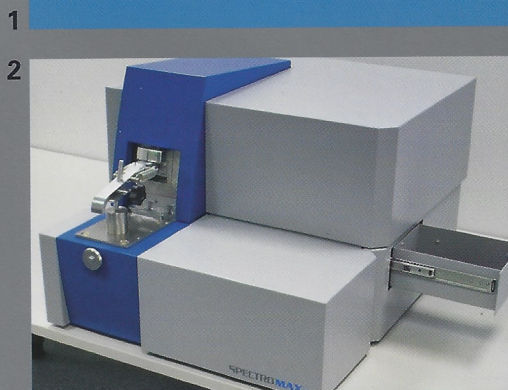
The housing permits fast access to all components. A drawer on the right side can be used to store the control sample and accessories, like sample adapters.

SPECTROMAXx	Benchtop	Floor model
D 233-670 nm	•	—
F 160-670 nm	•	•
M 140-670 nm	•	•

**1 2 models, 3 versions:**  
The SPECTROMAXx can be optimally configured for customer specific requirements.

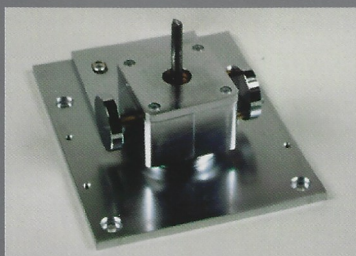
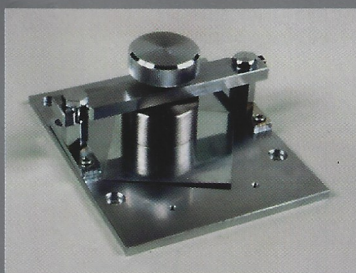
**2 Housing:** The innovative housing design guarantees fast and easy access to all components, and makes working with the instrument even more effective and efficient.

**3 Spark stand:** The engineered flow conditions in the spark stand translate to reduced argon consumption and minimal maintenance required.



The Windows-based software SPECTRO SPARK ANALYZER MX can be completely tuned to the desires and needs of the user – it can be both a **simple aid** as well as an expert interface for **setting and monitoring complex spectrometer functions**. In addition to an **extensive control system** running in the background, it offers a well-thought-out display and logging of the measurement results, a link to a powerful database, and simple integration into existing network structures.



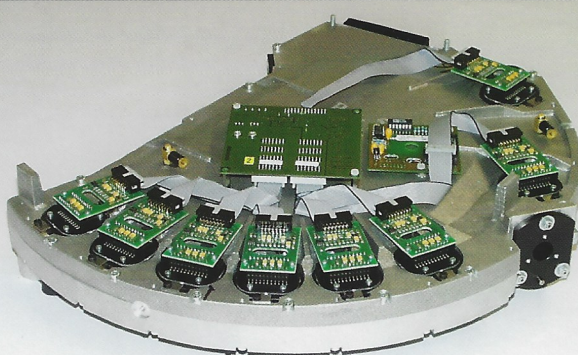


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**4 Adapters:** With the SPECTRO- special adapters, even the analysis of thin wires and thin gauge metal is no problem.

**5 Optics:** The innovative optical systems, coupled with the new read-out system, provides the ultimate in precision for analytical measurement values.

**6 Software:** Simple and comprehensive, the SPECTROMAXx software is easier to use and more powerful than ever before.

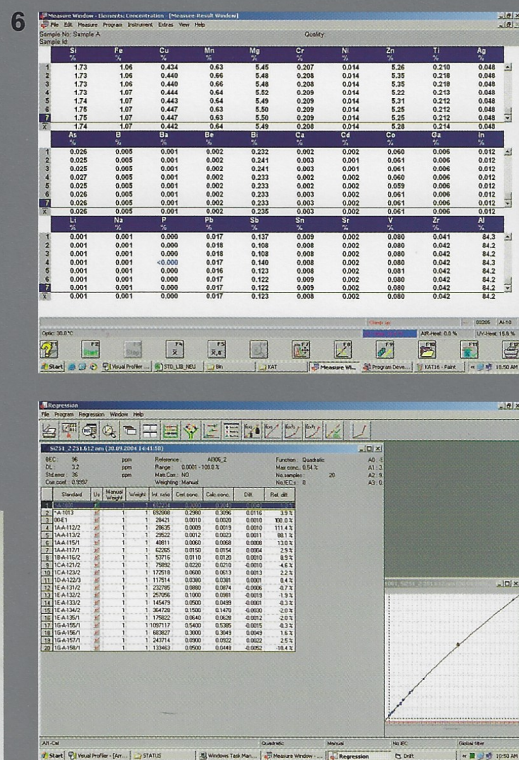


The SPECTRO **plasma generator** with digital discharge definition, digital pulse generation and digital offline pulse control, performs without any analog signals. The energy in the plasma is defined exactly and held constant; markedly increasing the precision of the system. New source parameters improve the reproducibility and reduce measurement times.

The **novel spark stand** of the SPECTROMAXx is distinguished by minimal maintenance requirements and **argon consumption that has been reduced by nearly half**. With the appropriate adapters, it is also able to **analyze wires and thin gauge metal**.

The **innovative optical systems** of the SPECTROMAXx are stored with all relevant components in a closed housing, reliably protected from dust and vibrations.

All of the chemical elements requiring analysis by the metal industry can be determined - including traces of carbon, phosphorus, sulfur, and **nitrogen**. Completely **defined calibration modules** are available for the relevant matrices (base metals), like Fe, Al, Cu, Ni, Co, Ti, Mg, Zn, Sn and Pb. They include the complete element range and can be adapted individually.



The SPECTROMAXx is well suited for applications like die cast or injection molding as well as for standard requirements in steel or non-ferrous foundries, also multi-matrix applications for incoming and outgoing inspection and all applications in the automotive industry.

With its fully digitalized plasma generator, the CCDs selected especially for emission spectrometry, the high-power readout system, the new spark stand, the innovative special optics and the ICAL logic system, the SPECTROMAXx has achieved analytical capabilities that have, until now, been the domain of conventional photomultiplier systems.



#### CCD Optics

- High resolution CCD-multidetectors
- Optical systems stabilized against temperature fluctuations
- Optical wavelength 140-800 nm
- Effective wavelength range:  
Model D: 233-670 nm  
Model F: 160-670 nm  
Model M: 140-670 nm
- Automated profiling

#### Analysis Modules

- Freely selectable analysis modules
- Optimized to customer requirements
- Expansion of additional modules on-site possible

#### Spark Stand

- Argon flushed
- Table plate easily exchangeable
- Quick change sample clamp for fast sample throughput
- Optimized UV-light path
- Semiconductor-controlled

#### Excitation System

- Fully digitalized plasma generator with digital discharge definition, digital pulse generation and digital offline pulse control
- 32 MHz micro-controller
- Sampling rate:  
400 in 200  $\mu$ s-discharge
- Energy resolution: 125 mW
- Max. spark duration: 4000  $\mu$ s
- Max. spark power 4 KW

#### Instrument Control

- Serial Source-Interface
- 16 Bit ADC
- 1 DSP-controller (50 MHz) for 16 CCD-detectors each

#### Spectrometer PC

- External Pentium PC
- Windows™ Operating system
- Keyboard and mouse
- Monitor
- Printer

#### Software

- Software SPECTRO SPARK ANALYZER MX for analytical operation and calibration
- Continuous automatic hardware diagnosis in the background
- Automatic alloy/grade verification and identification
- Pseudo-elements automatically calculated based on sample chemistry

#### Spectrometer Data

- 230/115 V  $\pm$  10 %/-15 %, 50/60 Hz
- max. 400 VA during sparking
- Fuse: 16 A slow-blow
- Temperature:  $+10^{\circ}\text{C}$  -  $+30^{\circ}\text{C}$
- Humidity: 20-80 %
- Version: Benchtop      Floor model
- Depth:      740 mm      740 mm  
                 29.1 inches      29.1 inches
- Width:      600 mm      600 mm  
                 23.6 inches      23.6 inches
- Height:      460 mm      1370 mm  
                 18.1 inches      53.9 inches
- Weight:  
approx.      60 kg      120 kg  
                 132.3 lbs      264.6 lbs



[www.spectro.com](http://www.spectro.com)

**AMETEK**  
SPECTRO ANALYTICAL INSTRUMENTS

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**SPECTRO operates worldwide and is present in more than 50 countries. Please contact our headquarters for your local representative.**

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## Technical Specifications